

The Chronicle of the EARLY AMERICAN INDUSTRIES ASSOCIATION

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Farm Implements of 1824

"The Compendium of Agriculture or the Farmers' Guide," by William Drown, published by Field and Maxcy, Providence, 1824, contains the following interesting references to farming implements of that period (the numerals refer to page numbers):

"The present period of low prices of products, and the necessity of economy, renders it expedient to enquire whether the labour of conducting our farms may not be abridged by the more general introduction of what are called labour-saving machines³⁹. . . Mr. Burgess, a noted agriculturist of this state, observes that our ploughs are far from the best; our harrows quite indifferent; rollers, scarifiers, drills, and threshing machines, scarcely used. He calculates that Woods' New York cast-iron plough can be moved with a power one quarter less, and that it will then do one quarter more work than any other plough in use in the state. One hundred and twenty acres were ploughed by four of these ploughs in one season; and the whole expense of keeping them sharp and fit for use did not exceed 56 cents each. The blacksmith's bill for ordinary wooden and wrought iron ploughs, for the same work, would, he supposes, have been \$5 each. It will be found therefore that not less than four shillings per acre will be saved by these ploughs; and the work done in every respect better^{39, 40}. . . Scarifiers are calculated to do the work of a plough and a harrow⁴⁰. . . A man with four horses and the broad scarifier has been known to do 60 acres of wheat in a week⁴⁰. . . In the common method of doing this work, two men, or one man and a boy, with a pair of oxen and a horse are employed, and they hardly finish an acre per day. — It is then to be harrowed or bushed or both. What will it all amount to? Probably fifteen shillings an acre. If done with the scarifier, it will not cost two shillings an acre⁴⁰. . . If an individual does not feel able to buy a corn-sheller, drill machine, etc., several farmers in a neighborhood could unite in the purchase and use them alternately. A manufacturer does not hold

any price too high for an improvement in machinery, whereby labour may be saved. — Shall it be said of the farmer alone, that he knows not how to appreciate the wonderful inventions and improvements, almost daily an-

Our Purpose

The purpose of the association is to encourage the study and better understanding of early American industry, in the home, in the shop, on the farm, and on the sea, and especially to discover, identify, classify, preserve and exhibit obsolete tools, implements, utensils, instruments, vehicles, appliances and mechanical devices used by American craftsmen, farmers, housewives, mariners, professional men and other workers.

Dues

The annual dues are one dollar, payable September first, for the year immediately ensuing.

The *Chronicle* is sent to all members without additional charge. Back numbers may be secured, when available, by application to the Treasurer, enclosing postage. Our supply of No. 1 is exhausted.

nounced to us^{40, 41}. . . Harrows with wooden teeth, are of so little use, that it is the opinion of some, the feet of the cattle will do as much injury in treading down the ground as the harrow will do good^{50, 51}. . . It would be a good plan for farmers to employ two harrows in succession; one of heavy frame, with few and long teeth; the other of lighter frame, with more and shorter teeth⁵¹. . . Rolling is of nearly as much importance as harrowing, in reducing and pulverizing strong, heavy, and adhesive lands;⁵¹. . . A wooden roller about 2 feet in diameter, and 6 feet in length, may answer the above purposes⁵². . . A

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Whale Oil Burners

Part I. The Cork Disc Burner

By EDWARD A. RUSHFORD

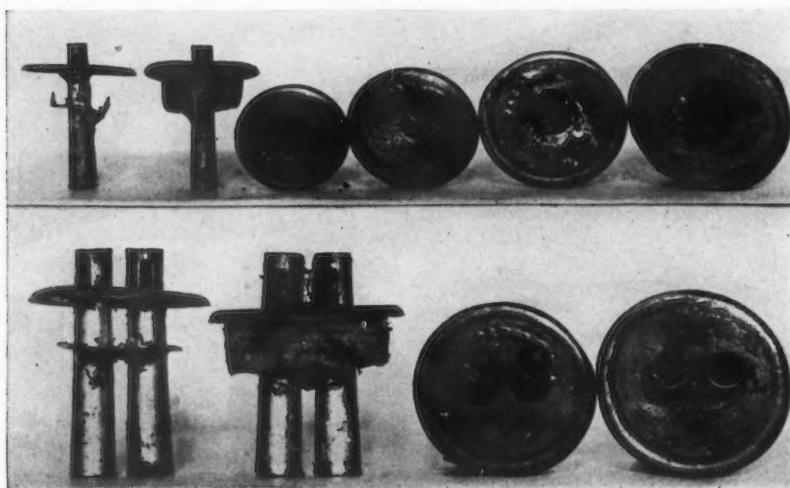
It has been suggested, and not without reason, that the original whale oil burner was made by simply piercing a cork stopper with a metal tube for the wick, and placing the combination in a bottle, which served as a reservoir. Such a lamp was recently found in a country junk shop. The reservoir, still retaining a coating of dried fuel, was an old blown bottle of about six ounces capacity. The neck of the bottle had been broken off, and the edges carefully filed for safety. The centre of the well rotted cork stopper was pierced by a crudely fashioned tube of tin, which still retained a fragment of cotton wicking.

It is really a long step in advance from this simple contrivance to the earliest type of whale oil burner,—that with the cork bushing, termed the cork disc burner. These burners were intended to serve with glass lamps only, and were inserted into the opening in the reservoir in the same manner that the cork stopper was inserted into the bottle. They are sometimes found in metal lamps, but an examination of the opening of these reservoirs will always disclose a thread, proving that a threaded burner was used originally.

The cork disc burner was made for one or two wicks only, and none have been reported with tubes for three or four wicks, such as are sometimes found in the threaded burner group, and the wick tubes are always round. They are made up of either four or five parts, depending on whether the burner carried one or two wick tubes. These parts are the top plate, the bottom plate, the tube or tubes and the cork disc. All parts, except the disc, are made of tin.

The top plate of the single-tube burner averages one inch in diameter, and the bottom plate half of this, and of course they are both circular. Around the outer edge of the top

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Cork Disc Burners
Single (above) and Double (below)

plate is a slightly raised rim, which, it is claimed, was intended to retain some of the overflow of oil from the wick. The plate is pierced by two openings, a central opening for the wick tube, and a much smaller one at the side, which has caused much more discussion among lamp collectors than its size would seem to warrant. Some claim its purpose was that of ventilation, others insist that it permitted excess oil to find its way back into the reservoir. Perhaps both are right, though my vote is with the "ventilators." The bottom plate is cut with two or three sharp points, or spurs, projecting from its edge. These are bent upward, and penetrating the cork disc, prevent it from turning. The plate is pierced for the wick tube, but the ventilator opening passes through the cork disc beyond the edge of this plate. The cork disc is smaller than the top plate, but larger than the bottom plate, though its size always made for a snug fit in the lamp's reservoir. The extension of the top plate prevented the entire burner from being pushed into the reservoir. A group of these little burners will show considerable variation in the thickness of the disc.

The tubes average an inch and a quarter in length, and a quarter of an inch in diameter at the bottom, though in both of these measurements considerable variation will be found. All wick tubes taper from below upward, a point in construction which facilitates the introduction of the wick. An oblong opening cut in the tube near the top, the pick slot, is for the entrance of the wick pick, when adjustment of the wick was needed.

The two-tube, or double burner is similar to that of the single wick tube, except that everything is larger. The main difference is in the bottom plate. With two tubes to hold the disc steady, the spurs found on the bottom plate of the smaller burner were no longer necessary. This plate has an additional opening for the ventilator opening.

The single-tube burners were probably assembled in the following manner. The bottom plate, with its spurs bent upward, was slipped over the wick tube, and a drop of solder, deposited on its under side, fixed it in place on the tube. Then the cork disc was placed on the tube and pressed down firmly, to force home the spurs. The top plate came last, but, before it was pressed into position, more solder was dropped between it and the disc to make its position secure. The piercing of the small opening for ventilation completed the operation.

Perhaps the most interesting, and at the same time mystifying, feature of these burners is the word *PATENT*, die-marked on the top plate. I have yet to see one of these burners which was not marked in this manner, though at times considerable polishing is necessary to prove this fact. The letters will be found arranged in an arc, close to the rim of the plate, and nearly opposite the vent opening. To date, all efforts to obtain information in regard to this patent have been fruitless, though several students of lighting have delved into the mysteries of this little detail. Perhaps some reader of this article may be in possession of this information.

Exhibiting Early American Tools

(Arranged according to their use in production)

By STEPHEN C. WOLCOTT

In submitting the classification of tools in the February issue of *THE CHRONICLE*, my object was to get criticisms from those who are interested in collecting, as well as from those who, having them, wish to display them to the best advantage under some kind of classification. The one given, I realize, is more fitted for the identification of a tool, or for cataloguing it. We are trying to embrace two distinct objects under one cover,—one, a grouping of all tools used for similar purposes; the other, an arrangement of tools for display, at the same time showing their uses or purposes as a classification. Personally, I have found that tools arranged or displayed in groups of one kind, such as those which were used for the same purpose,—all bit stocks, all planes, all levels, all hammers, etc.—arouses the greatest interest, affording, as it does, a series of contrasts or comparisons.

Mr. U. Waldo Cutler, of the Worcester Historical Society, under "Museum Notes," has gone me one better, and, knowing his public—and all publics are alike,—has suggested what promises to be an interesting solution. His wish is to develop interest in the tool by its application,—first, in securing the raw material, secondly, in the processes of production. In other words, he suggests classifying it according to its trade use, or its use in a specified trade.

Working on this basis, I am submitting a proposed arrangement for your criticisms and suggestions. If there is sufficient interest in this idea, I will gladly complete the two trades I have used for its demonstration, as well as many others with which I am familiar. To carry out this idea, anyone wishing such a display could have either line drawings showing the operation of each tool, with the tool, or even small pieces of material in process of being worked with the tool. There is no doubt that the "general public" is more interested in the product than in the means of production. Our object is to attract their attention and lead it to the tool through the method of production, portrayed as well as space and means will allow. We will all agree that the best demon-

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Early American Industries Association

Hunting Treasures for a Museum

(Continued from last issue)

By WILLIS H. ROPES

In the palmy days of Salem's commerce, coopers were indispensable and Salem wharves were lined with cooper shops, but when I tried to find cooper's tools in Salem, there were none to be had. They had gone into the junk pile as they, being made to work on curves, could not be used for ordinary purposes. In Rockport I met an old cooper, James Bradley, who had kept his set, numbering perhaps a hundred tools, and he gave me them. He suggested that I see James Everdean in Gloucester, the best cooper in that city, formerly employed by the United States government to make large salt tubs to levy customs.

I found him in his house, told my errand and asked him what he was intending to do with his tools. "Nothing," he replied. "They cost me a lot of money but will never be used again. I am 86 years old. Everything now is made by machinery." I asked him if he would be willing to give them to the Essex Institute to be saved and exhibited some time. He replied, "Yes, indeed, they can have them. I think I would sleep better nights, if I knew they would not be thrown away." He had a model of the Constitution under full sail, which he had built. His daughter gave it to the Peabody Museum and it was brought there the day of the Salem fire.

There are hundreds of cooper's tools in the Everdean collection, planes, draw-knives, cooper axes, with the knife on one side of the handle, and sets of four steel truss hoops for setting up kegs of six sizes, (1, 2, 2½, 3, 5, 10 and 20 gallons.) Jacob Agge of Salem made all his truss hoops for him, he said.

A century ago, little shoemaking shops were to be found everywhere. Farmers, fishermen and many who were unable to work at their callings in winter, gathered at these little shops and made hand sewed shoes and boots for future needs. The Lye-Tapley shoemaker's shop of 1830, brought from Lynn to the yard of the Essex Institute some years ago, contains a team of six leather-seated shoemaker's (or so-called cobbler's) benches and the shop contains cobbler's tools and appliances gathered from all over the county, given to me for the Essex Institute.

In the annex is an axe given by L. B. Curtis which was found in Riverdale, Gloucester, in a house which he owned that was built in 1735. The floor in front of the fireplace was torn up for repairs, and the space beneath was found to be full of sand which had sifted through. When removed, this axe was found which was left there by the builders at the time the house was built. The axe was shaped like a large tomahawk, with a long, round handle. It was a clumsy tool, as were most of the early carpenter tools. The blade was deeply corroded on the top side by salt in the sand but the underside was steel blue.

The slating tools of former Mayor Thomas Pinnock, also the set his father learned the slater's trade with, are in the Essex Institute. The saddler's tools of Frederick Coombs of North Salem are preserved in the collection.

The Essex Institute is very rich in old-time household appliances. The lantern with horn sides in the enclosed kitchen of the main museum is a rare item. The original name was "horn-lamp." When every meal was cooked at the open fireplace, a board, about as large as a wooden shingle, was universally used to spread the corn bread dough on, to bake it before the open fire, with perhaps a flatiron behind it to prop it up. There are two of these in the annex of the institute. One was given to me by Miss Tappan of Manchester, an old lady, who said she had seen her grandmother bake corn "pone" on it before the open fire. The other was handed to me by Mrs. Tresson of Rockport, who had seen it used by her grandmother. Can any other historical museum show a specimen? When stoves came into common use they were doubtless split up for kindling. It is said that they are still used in the south.

A great many curriers' tools are to be found in the Essex Institute collection and their uses would be unknown to many. The slicker, a scraper used to push moisture from hides in process of leather making was first made of lignum-vitae wood, later glass and rubber edges were inserted and still later dull, polished steel was used. Originally leather was thinned and made of even thickness by a shaving knife over a "beam." Leather in process was easily wasted or injured by careless shavers, and good careful workmen could make "big money" at piece work. Shaving machines with keen knives set into steel rolls, in curves similar to lawn mowers, replaced them and produced better and

more even results. Other tools used by curriers were curved wooden boards, with cork surfaces, attached to the arm to soften finished leather. They are still in use by curriers. With the introduction of chrome tanning, the use of oak and hemlock bark was largely done away with, and the use of dried tan for burning in stoves was given up.

Leather was formerly measured by a wooden frame, with cord inserted at regular intervals, making squares. The late Mayor James H. Turner was the last one to use the measuring frame. An automatic measuring machine has now taken its place and is very accurate.

It is little wonder that many houses were not painted in the early years of the colonies when so much work and expense was needed to prepare the paint. The institute has the two early forms which were used. The first was the mulling and paint stones. The former was a mow shaped stone, about eight inches high, with polished flat bottom held in the hand and used to grind pigments on the flat paint stone before the linseed oil and white lead were added. Later the paint mill was used. Pigments, with some oil added, were ground by a crank between smooth metal disks and caught in a receptacle from a side spout. The mixed paint in many colors, first prepared by John W. Masury, who was born in Salem, did away with this slow, laborious and crude process, and enabled people to order paint by number, and be assured of uniformity.

Examining the card catalogue of the museum objects at the Essex Institute, I find that they also have tools used by stone masons, blacksmiths, gaugers, hingemakers, shipsmiths, bellhangers and glaziers, many of which I secured. I find also that my name appears in the accession book nearly 200 times, each case in most instances representing many items.



A member has an interesting "gad-get" for making quill pens, made of ivory and metal. It is 4 in. x ¾ in. x ⅝ in. and bears the name of Mathieu à Paris. A quill was inserted in one end, and a rocker blade, operated by a lever, cut the quill end to a pen form. A sliding knife blade,—broken in this case,—was used to slit the nib, and a second cutting blade, when pressed, cut the end of the nib, to form a stub, if desired. Quite possibly, a similar article may have been manufactured in this country.

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Farm Implements

(Continued from page 1, column 2)

plough, called a cultivator, has been constructed with two mouldboards, which turns the mould both ways at once⁵³. . . For digging drainage ditches, the most expeditious, effectual, and economical mode, where the ground is not too miry, will be to use a plough and an ox-shovel. It is supposed that two men, a boy, and two yoke of oxen, will accomplish more in a day, than six men with only spades and shovels. With the scraper, all the inequalities of the ground, upon the borders of the ditch, can be conveniently filled up⁵⁶. . . As oats are extremely liable to shed on being cut down, cutting the crop a few days before it is perfectly ripe, will be a considerable saving in grain. The straw is so valuable a fodder, it is better to cradle than to reap this crop. Though they should be well dried on the ground after cutting, they should not be raked or handled at all, when they are in the driest state. It should rather be done in mornings and evenings, when the straw is made limber and pliable by the moisture of the air^{100, 101}. . . Drilling is a method of sowing seeds with a machine, by opening one or more furrows, at proper distances from each other, of a depth suitable to the seed to be sown, and at the same time dressing (dropping?—Ed.) the seeds, and covering them all at one operation. It is drawn by one or more horses, according to its size; or it may be drawn by hand, or pushed forward, something similar to the manner of pushing a wheel barrow, where a machine for drilling a row at a time is to be used¹⁰⁶. . . In gathering potatoes, it is said that one man can throw out of the hill, with a four-pronged fork, as many as five or six hands can pick up and cast. (Suitable forks are for sale at the Repository in Boston.)¹¹³. . . Ruta Baga should be put into a tub, and cut small with an instrument like a hoe, with the blade put perpendicular into the shaft. A man will with this instrument cut as much in one hour, as six horses will consume in twenty-four¹¹⁵. . . Horse rakes are very useful on all smooth meadows. It is said, a man, horse, and boy, will gather hay with this implement, as fast as six men in the ordinary way. The expense of the rake will not exceed two dollars. It is composed of a piece of scantling three by three inches, ten feet long, into which twenty-five teeth, one inch by one and a half in diameter, nearly two feet long, and three inches apart, are inserted horizontally. The teeth

should be made to turn up a little at the end, to prevent their running into the earth. Eight pins, twenty-four inches in length, are driven perpendicular into the scantling, and into another light piece at top, and there are also attached two handles, similar to those of a plough. The horse is connected by a rope at each end."

(To be continued in next issue)

Exhibiting Tools

(Continued from page 2, column 3)

stration would be an old shop, with all the old tools in process of being used. Lacking this, on account of expense and space, let us see what others have done, or use our own ideas. The Deutsches Museum in Munich, Germany, has a picture model that gives a splendid idea of the use of lumbering tools, but this again is expensive and takes considerable space. The South Kensington Museum in London has two ways of displaying some of its tools,—one by showing the evolution of a certain type of tool, another by arranging them according to trades. The first requires a large and varied collection; the other will interest those who know something of that trade, but does not catch the attention of the general public.

There are two other ways that suggest themselves, based on Mr. Cutler's idea,—one, by illustrations which may be simple line drawings, showing the operation of a tool, with the tool itself; another, a large picture,—say two feet square,—showing the various processes used, with lines or strings, leading from the illustrated use of a tool to the tool itself. From an educational point of view, this arrangement is, no doubt, of great value as well as interest. I can see cross references to a "use" classification as a catalogue.

Such a display of a complete set of cooper's tools, including the large ones, such as bench, etc., could be shown, if space is limited, in a case two feet wide by ten feet long by seven feet high. This, of course, could be enlarged to advantage, but it will cover the subject. It is evident that this could be placed against a wall, or, as one side of a double case, standing in the middle of a room. They can also be arranged, as described above, in groups of each kind, showing the evolution, in this country, from the primitive home-made tool to the factory product, which came into use about 1820, or to the perfected tool of today.

To illustrate Mr. Cutler's idea:

CLASSIFICATION OF TOOLS USED BEFORE 1840

According to their use in production in specified trades

Trade — COOPER

Product — Round Barrel Hoops	
RAW MATERIAL	PROCESSES
Cutting saplings — (Axe, or hatchet)	Starting the split — (Hatchet, draw knife)
	Splitting — (Splitter, bench-knife, hardwood post)
	Making bundles of hoops — (Bundling frames, bundler)
	Trimming bark from ends and edges — (Shaving horse, draw knife)
	Driving on chime hoop — (Wooden chime, maul)
	Cutting lock in hoop — (Cooper's adz)

(N. B.—This is only one part of the cooper's work. There would have to be corresponding outlines for staves, headings, assembling of slack barrels, assembling of tight barrels, and one on "white cooperage." In the museum display, however, these could be all arranged in one case.)

Trade — WHEELWRIGHT

Product — Hubs	
RAW MATERIAL	PROCESSES
Felling tree — (Felling axe)	Shaping — (Lathe, lathe tools, calipers)
Cutting stocks — (Crosscut saw)	Mortising for spokes — (Compass, hub block, mortising chisels, corner chisel or buzz, mallet)
Peeling bark — (Barker, or spud)	Fitting for axle or axle box — (Augers, reamers, hook reamers, boxing chisel, hub boring block or tripod)
Drying hole in hub block or stock — (Nose auger)	

The above are offered as suggestions. May we not have your ideas?

The Rushlight Club

The Rushlight Club held two very interesting meetings on April 14th and May 5th. On the first occasion, the club was delightfully entertained by Mr. and Mrs. Bertram K. Little, in the quaint Counting House on Boston's famous T wharf. Vice-president L. L. Thwing read an instructive paper on fluid-burning lamps and actually demonstrated with fuel of his own manufacture. President Rushford followed with a comprehensive treatise on the many varieties of such lamps patented by Isaiah Jennings. The members exhibited many rare specimens of lamps in this class. For the May meeting, Mr. and Mrs. W. Perry Fiske offered their unique Open Front Cabin at Sharon, Mass. This was the much heralded "barter and sale" meeting and was eminently successful, many unusual items changing hands.

Early American Industries Association

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Communications should be addressed as follows: Pertaining to THE CHRONICLE, S. C. Wolcott. Candidates proposed for membership, to S. E. Gage. Suggestions for prospective members, to A. E. Lownes. Addresses as above.

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S. C. WOLCOTT, Editor
W. B. SPRAGUE, Assistant Editor

Editorial

Some hobbies are expensive, some take up too much space for their proper display, and some are of no benefit to anyone. We would remind our members that the word "Industries" in our title has a broader meaning than, simply, implements of production. We have emphasized in our articles the words "tools and implements," and rightly so, as they are the tangible means of representing industry, but there is a large field in connection with our work, as yet little explored, in which one will find a keen elation and a satisfaction of accomplishment, with no expense other than time,—that is, the collection of information relative to early American industry. There are few books, or even articles, on the industrial side of American hand work. There are practically none dealing with the use of the various tools connected with such work. We have the products of such industry in great quantity, and we are gradually acquiring the means of their production, but it remains for some

searchers for the truth to connect these two and to bring to light, from the minds of the few remaining men who actually did the work, a record of the processes they used. Anyone undertaking this will find it an engrossing pursuit—one in which there will be a wealth of return at little expense, one that can be taken up anywhere, and one that will furnish an interest wherever you are. When you are well started on your quest, a picture, a sentence, a chance remark, a glance into a room or a barn, may give you a real thrill of inspiration. You who have not tried it may be skeptical, but select some branch of early American industry, or some phase of early American life and try to find out how our early settlers solved the problems which it presented, and what methods and implements they used. Talk with any and all of the oldest inhabitants, and make notes as you go. Write up any such information and send it on to the Editor, if you do not care to use it yourself, that he may combine it with other bits, and eventually work it into these pages.

Our Finances

We have done away with the "box," which formerly appeared on this page, containing news of the "Experiment," partly because it seemed to be getting rather tiresome, but chiefly because it was too easy for a reader to skip it. We feel bound, however, again to remind the members that the date of our next publication rests entirely with them. Our February number appeared early in the month, but each subsequent issue had to be held up, pending the accumulation of the amount necessary to pay for it, so that we were barely able to bring this out at the end of May. *We will not publish at all during June*, unless the treasury is replenished by new members' dues or by special contributions. Our funds in hand will pay for one more number after this one, but if there is to be only one more before September, when the annual dues become payable, it would seem wiser to hold it back until July. Won't you please let us have the names of one or more persons who *might* be interested in joining, or, if you cannot do that, send the treasurer a contribution of such amount as you can conveniently spare? As previously explained, if the association's present rate of growth continues, we should have no financial difficulties after September 1st.

Acknowledgments

Again Mr. Charles Messer Stow has given us a splendid two-column write-up on his increasingly popular "Antiques" page of the *New York Sun*. The *Paterson Call*, of Paterson, N. J., has borrowed many of our cuts, with the avowed intention of reprinting several of our special articles, with due credit to THE CHRONICLE. In *Antiques* for May, mentioned with other clubs, we are especially complimented on being "enterprising." In *Foundation Facts*, published in Three Oaks, Michigan, our member, Miss Lena Van Genderen, gives us a liberal amount of space, with an excellent statement of our aims and ideals. We envy *The American Collector* its excellent article on glassworkers' tools, but are greatly pleased that this excellent "antiques" magazine is already recognizing the importance of early tools and implements, and that this message will reach many who are outside of our circulation.

Introducing Mr. Anderson

No longer shall we have to depend on amateur sketches. Mr. Raymond Anderson, associated with Standard Technical Service, 154 Nassau Street, New York City, has very kindly offered, without charge, to make any technical drawings, which are intended for publication in THE CHRONICLE, either from photographs or from small objects which are sent to him by members, at their own expense. If you have in mind anything of the kind, communicate directly with him.

Will You Show Your Collection?

For the benefit of those members who may be taking motor trips during the summer months, we propose to publish in the next issue, a geographically classified list of museums which exhibit early industrial material, and of individual collectors of such material, who are willing to exhibit their collections at convenient times by *previous appointments*, as well as of dealers who usually carry a fair stock of such material. If you are willing to be included in this list, or if you know of anyone else who should be, please, as promptly as possible, advise W. B. Sprague, 43 Cedar Street, New York City, who will compile the list.

The Chronicle

Felt Hat Manufacture

By WILLIAM B. SPRAGUE

(Continued from last issue)

(N.B.—Letters and numerals refer to list of authorities at end of article.)

The hat was then dried in a stove (E272) and the surface smoothed or pounced with pumice (D241, G641, J994), seal skin (D241, G641) or emery paper (P60).

Dyeing was done in a solution of logwood, verdigris, oak bark, green copperas or blue vitriol (A170, B117, W91, K1071). Ten or twelve dozen hats, each on its block, were placed in a vat, containing the solution, and kept down by cross bars for about an hour and a half, then taken out and aired, and the same number of others put in their place. The two sets were thus dipped and dried alternately, eight times each, the "liquor being constantly refreshed with the ingredients" (W91). By another method, "hats to the number of forty-eight or more, on blocks, are hung on a wheel, by means of pegs which pass through the centre of the blocks, and the wheel is turned so as to keep one-half of the hats alternately in the dye" (N61, H53, S). Hazen's picture, reproduced with the first instalment, shows this method quite clearly. Sometimes about five dozen hats were hung in an iron cradle and lowered by means of a crane into the vat, thus being dipped and drained thirteen or fourteen times (C5). Note the crane in the background of Tomlinson's picture, "Hat Maker's Battery," published with the second instalment. The *slip-stick*, a flexible wooden blade, was used to remove the hat from the block (U), see illustration (7).

For *stiffening*, there were two boilers, one containing beer grounds, and the other, glue dissolved in water (A170, B117). The beer grounds were first applied to the inside of the crown and allowed to dry (A170, B117, D241, G641). Sometimes vinegar or a decoction of horse-chestnut leaves was used instead (E272). The glue was then spread on the inside of the crown and the under side of the brim, and was prevented, by the coating of beer grounds or other solution, from soaking through to the face of the hat, which would hamper an even finish (A170, B117, D241, G641). Shellac was also used, in which case "the hat was steamed in a box to cause the stiffening to set" (H53). A composition of india rubber was used for stiffening as early as 1848 (E273, J994). For brushing on the stiffening, the hat

body was "put into another hat, called a stiffening hat, the crown of which is notched or slit open in various directions. These are then placed in a hole in a deal board, which supports the brim, and the glue is applied" (A170, B117, E273). The stiffener's trench was used to procure an even spread of the stiffening and to press out the excess (V), see illustration (11). It differed only slightly in construction from the former's trench, but while a stiffener could use a former's trench, the reverse was not true (T). The nap was again raised by whipping with a rattan (H53, S) or by pressing with the under edge of the stamper (E273).



General View of Hat Shop
Source unknown. Probably European.

After the stiffening process, the hat had largely lost the shape given to it by blocking. It was, therefore, first softened with steam (U, N61, S, Za). A hot iron was placed within a circular frame over which a wet cloth was thrown, the crown of the hat raised over the steam, the brim resting on the frame (E274, D241). It was placed on the *finishing block*, illustration (15), which rested on the *block spinner*, illustration (16), and afterwards on the bottom board, and moulded, to it by means of the tight string, kept wet and brushed and ironed. (A171, B118, G641, H53) and the brim smoothed with the tolliker (U). The early iron was somewhat in the shape of that used by tailors, but shorter and broader on the face (A171, B118). The charcoal-burning iron, illustration (22), used to some extent for this purpose in the 1850's, was not entirely satisfactory, it being too difficult to maintain an even temperature (U). The *shell* (U, Za) or *slug* (K2217) was the approved iron of this period,—a cast-iron affair, illustration (23), with a door at one end, through which the heated slug, illustration (23a), was introduced and its

heat communicated to the face of the iron. Every hatter owned his shell, but the "boss hatter" furnished the slugs, possibly because their weight was not welcome in a kit of tools. They were heated in a coal fire, and would rapidly burn out and disintegrate (U).

The brim of the hat was next cut to the size and shape desired. If "not intended to be of an equal width throughout" this was done "by means of a wooden or metallic pattern" (A171, B119). The cut was not carried all the way through, and the "redundant part" was *torn off* so as to leave the brim with an edging of beaver (A171, B119, D241, G641). The tool used for this cutting is described by the early writers as follows: "A number of notches are made in a flat piece of wood, for the purpose of inserting the point of a knife, and from one side or edge of this piece of wood there proceeds a straight handle, which lies parallel to the notched side, forming an angle somewhat like that of a carpenter's square. When the legs of this angle are applied to the outside of the crown, and the board lies flat on the brim of the hat, the notched edge will lie nearly in the direction of the radius, or line pointing to the centre of the hat. A knife being therefore inserted in one of the notches, it is easy to draw it round by leaning the tool against the crown, and it will cut the brim very regular and true" (A171, E274). Others merely say that the brim was "trimmed with a blade placed in a gauge (H53, G641) which rests against the crown" (D241). The *rounding-jack*, in its modern form, illustration (8), probably first appeared about 1850 (U). The method of its use will be readily understood by examining the sketch (8). The black spot on the central piece represents the blade. After pressing the curved piece firmly against the blocked hat, and sliding the central piece in or out until the blade is at the desired distance from the crown, then tightening the thumb screw, the blade is made to journey completely around the hat, cutting the brim on its way. If this was done while the block stood on the bottom board, the latter was always protected from the blade by placing over it the *rounding-tin*, a sheet of zinc the same size as the board, with a hole in the centre to slip over the peg. A *rounding jack* has been defined as "a stand on which a hat is fixed to have its brim trimmed to shape and size" (K1994) but the same author gives its correct definition at another point (K1074).

(To be continued in next issue)

Early American Industries Association

New Members

Please check your name and address and advise Mr. Goodnow of any corrections. The total membership is now 240.

Charles E. Ayers, *Worcester, Mass.*
Miss Lillian W. Baschen, *Freehold, N. J.*
Miss Barbara B. Bird, *Summit, N. J.*
Pelham Bolton, *Sayville, L. I.*
Mrs. A. C. Bowman, *Springfield, Vt.*
Miss Gladys P. Brown, *Milton, Mass.*
Mrs. Hattie K. Brunner, *Reinholds, Pa.*
Mrs. R. S. Brunner, *Reinholds, Pa.*
Robert Burkhardt, *Kutztown, Pa.*
Miss Florence Carbutt, *Montclair, N. J.*
Mathew L. Carrigan, *Flushing, L. I.*
Chester P. Cook, *Nazareth, Pa.*
Dr. Arthur Corby, *New York City*
Rev. Harry Carr, *Gloucester, Va.*
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Hiram E. Deats, *Flemington, N. J.*
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John H. Ruckman, *Doylestown, Pa.*
E. L. Sampter, *New York City*
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Charles H. Wilson, *New York City*
Mrs. H. E. Wolf, *New York City*

Museum Notes

(A museum or just a collection of curiosities?)

By U. WALDO CUTLER

A real museum is an educational institution. It exists to create character and to recreate people capable of developing personality. It does its work, not by giving facts directly, not by verbal exposition or argument, but rather by interpreting facts and conditions relating to its particular department of human interest. Its teaching material is not books and other printed or written matter, but the signs and symbols, the visible and tangible representations of art or science or philosophy or history. The exposition or argument may be suggested, but it is not expressed by spoken or recorded words.

A definite plan in arranging and administering a museum is as necessary as it is in effectively ordered thought in a written or spoken discourse. For a historical museum, there are several plans from which to choose. Perhaps two or more may be combined, but there must be some system in arranging and labelling, as well as in guiding visitors about, if the collections are to escape being a junk shop rather than a museum.

So far as limitations of space and funds will allow, in the Worcester Historical Society Museum, we have followed a plan of arrangement that may be called an Occupational Plan, an organization of historical source-material by trades or by particular types of skill or taste. This plan is very fitting in a museum that calls itself a Museum of Life and Livelihood, or of Tools and Trades. So, beginning with the trapping and fishing stage of industry in nascent Worcester, we have the old bear trap and the fishing gear. Then, as the ground became cleared, agriculture was possible, and there is the exhibit of farming and grazing and logging tools. Flax raising and wool growing now became possible, and the textile exhibits come into their place, with card-clothing, dairying, candlemaking, sausage-filling, etc., each well illustrated near by. House-building, road-making, coopering, cooking, printing, paper-making, all come into proper position and thus develops the whole long story of machine-construction travel, and all the other activities that make up what we know of our civilization.

Plan in arranging a museum implies also plan in administering it. A true

professional spirit is coming to unite museum workers and officials in an eager purpose to make their work effective. All who yield their services as guides or interpreters or technicians or assistants in and about a museum should catch this professional spirit, and should make themselves earnest students of the museum itself and also of the subject the museum represents, whether history or art or science or industry or life in some more general sense. They should likewise know human nature; they should be able quickly to catch the spirit and purpose of an inquiry, to lend aid in a line of research, or tactfully to quicken an interest in the mind of a careless, indifferent boy or girl who has just dropped in out of curiosity or to escape the storm outside. A vital, sympathetic, thoroughly human, well informed personality must stand behind the *things* that make up a museum, transforming them into a connected and effective lesson in Life and Livelihood.

The Hobby Show

The Hobby Show, which was open from April 25th to April 30th, offered attractions for almost every class of collector. At the last minute, owing to transportation complications, Mr. Wiggins found himself unable to exhibit a very large amount of material. However, the booth which he engaged was very attractively dressed with large and excellent photographs of his collection, interspersed with early lamps and other interesting objects of a utilitarian nature, and bore the name of our association as well as that of Mr. Wiggins' Tavern. Sample copies of *THE CHRONICLE* were available, and with Mr. Goodnow in charge, assisted occasionally by some of the other officers, nearly thirty new members of fine quality were secured. Our member, Mrs. Florence A. Storm, of Teaneck, N. J., was most helpful by referring to us the visitors who seemed especially interested in her wonderful exhibit of crude iron and wooden utensils and implements.

As an example of the value of "comparing notes," Mr. Gage writes that another member has corrected his statement in the last issue, as to the latest date at which paper was made by hand in this country. It now appears that this was done by the L. L. Brown Paper Co., Adams, Mass., until about 1900.

Toothbrushes were apparently a novelty in 1782. A letter of that date, quoted by Helen Everson Smith in her *Colonial Days and Ways*, Century Co., 1900, states, "It is a brush for the teeth made of fine, stiff, white bristles set in a back of mother-of-pearl . . . You might find me one. Only it need not have so fine a back, one of wood or horn would please me as well.

INQUIRIES AND REPLIES

(Inquiries and replies are published only if it appears that they will be of general interest to our readers. All other questions will, if possible, be answered direct, but please enclose postage.)

Q. Is there any way of dating a home-made apple-paring machine, all the working parts being of wood rather than metal? **A.** It would seem that practically all of these were turned out between about 1815 to 1845. *The American Artists' Manual*, by Jas. Cutbush, (Johnson & Weaver, Phila., 1814) shows, as a novelty of the time, a wooden apple-paring machine of the most elementary construction, with no provision whatever for increasing the number of revolutions of the apple over those of the crank, or for guiding the knife except by the hand. This almost forces the conclusion that those with gears, belted wheels, etc., came later. According to *Knight's Mechanical Dictionary* (1874), the apple-paring machine was referred to, as a novelty, in literature of 1840 (probably the cast-iron factory-made ones were the subject of this reference), and over eighty patents had been issued up

to 1874 for devices of this character. Several types are illustrated by Knight, pages 125, 1633, 1643.

Q. How does one distinguish calico and wall-paper blocks from cookie moulds, butter prints, wood-cuts, etc? **A.** The wooden blocks for printing calico varied in length from nine to twelve inches and in width from four to seven inches. They were usually made of boxwood, apple, pear or beech, and were carved in relief on the sides of the blocks and not on the ends. The blocks for printing wall-paper, and later oilcloth, were so similar to the calico blocks that they can scarcely be distinguished by anyone but an expert. Engraved cylinders for printing calico were in use as early as 1827, but the old hand method continued to be widely used down to the last quarter of the last century.

"POINTS" OF INTEREST

The relative merits of moulded and dipped candles was a moot question even in 1838. The New England Farmers' Almanac for that year contained the following item: "ECONOMY IN LIGHTS: Ure's chemical dictionary states that mould candles which give 10 to the pound will burn 5 hours and 9 minutes; and dipped, 4 hours and 36 minutes. The former, that is, the mould candles consume 132 grains per hour — the latter; 150 grains. It thus appears that the 8 moulds are the most economical for those who cannot afford more light at more expense. Ure also states that 2 pounds of oil, value one shilling, in an argand lamp, are equal in illuminating powers to three pounds tallow candles, which cost about three shillings. Thus, as a matter of economy, we should burn good oil, or tallow candles cast 8 to the pound."

Usually we think of wooden shoes (for pedestrian purposes, rather than for treading sauerkraut into barrels, walking around in tanneries and special purposes of that kind) as distinctly a European,—or at least a non-American,—product, yet a member reports that he found, in one of the larger Connecticut cities, a set of curious, hand-made tools, similar to those which Diderot illustrates for this purpose. The family which owned these stated that their deceased owner had worked with them for several years in that locality and sold many pairs of sabots to the local residents, with whom they became quite popular for daily use. Our correspondent adds sadly that he was unable to acquire these tools for his collection, as there was too much "family sentiment" attached to them to permit of a sale *within his means*.

To enable oneself to distinguish between various kinds of wood used in construction and manufacture usually requires careful observation and "practice" over a considerable period of time, but there is at least one moderately priced and easily obtainable book which should be very useful to anyone seeking to perfect himself in this way. *The Principal Species of Wood*, by Charles Henry Snow, published by John Wiley & Sons, New York, 1910, deals with practically all the commercial woods used in the United States, with excellent cuts illustrating the tree, the bark, the leaf, and especially a cross section showing the grain, and contains much detailed information, especially as to the specific qualities of each variety, whether pliable or brittle, light or heavy, etc., as well as the principal uses to which it is put.

ADVERTISEMENTS

Two cents a word (minimum 50c). Count each initial and number as a word. Remittance, payable to E. T. Goodnow, Treasurer, should accompany copy. Where the advertiser's name is not given, address the Editor. Dealers will not be regarded as "commercializing" their memberships by inserting or answering these advertisements.

FARM IMPLEMENTS.—On a farm in this vicinity which has remained in the same ownership since Revolutionary times, I offer for sale, at moderate prices, the following early items of farm equipment: revolving hay-rake, fanning mill, hay-cutting box, plow, dog or sheep power, many hand tools and other smaller items too numerous to mention, also early pine corner cupboard still in house. Mrs. R. C. Cummings, 100 Port Watson Street, Cortland, New York.

(If you answer the above advertisement, be sure to mention *The Chronicle*, as the Association is to receive a commission on all sales through this medium — Ed.)

YE STEPPING STONES SHOPPE, 764 Cedar Lane Road, Teaneck, N. J., offers crude utensils and implements in wood and iron.

WANTED — ANTIQUE FISHING TACKLE of all kinds, rods, reels, hooks, line, spears, etc. Describe fully, quoting lowest price. John T. Snyder, 100 Broadway, New York.

WANTED — FRAME PIT SAW; hatter's battery; pigeon stool wool comber's pot; hand forged surgical instruments. W. B. Sprague, 43 Cedar Street, New York City.

NORMAN GEHRI, ANTIQUES — 180 South Street, Morristown, N. J., showing a collection of carved wooden store signs, and early glassworker's bench with complete set of tools.

THE OLDEST NEWSPAPER Antiques Feature in this country appears regularly in the *Boston Evening Transcript*. Illustrated articles on all branches of antiques and the latest news in the collecting world. \$1 for 3 months; \$1.75 for 6 months; \$3.50 a year. Send for sample copy. William Germain Dooley, Boston Evening Transcript, Boston, Mass.

THE VILLAGE STUDIO, West Cummington, Mass., offers a wide range of books of trades and industries; large assortment of tools and implements to select from; advise us of your interests.

